TROY

Font Memory Card Kit
User's Guide

(For use with Hewlett-Packard 2420, 2430, 4250, 4350, and 9050 Series Printers)

> **This User's Guide is for TROY Font Memory Card Kit users only. If you purchased a TROY Security Printing Solutions Printer, please refer to the TROY Security Printing Solutions User's Guide provided on the TROY Security Printing Solutions CD.**

Acknowledgements

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Preface

This manual is designed and formatted for use as an online document (viewed on your computer screen). The document can also be printed; however, it is recommended that you print only the pages applicable to your security printing solution. Printing the entire document will print all the pages for all of the TROY Security Printing Solutions covered in this manual. For best results, you must use Adobe Acrobat Reader 5.0 or higher to view or print this document. Earlier versions of Adobe Acrobat Reader will not produce a properly formatted document on your computer screen. The latest version of Adobe Acrobat Reader is available as a free download from the Adobe Web site at http://www.adobe.com.

Conventions

This User's Guide uses these conventions:

Bold indicates emphasis or a minor heading.

Italic refers to a document title or is used for emphasis.

COURIER type indicates text visible on a computer screen or keys on your computer keyboard.

DISPLAY FONT indicates text visible on the printer control panel display.

The letter ℓ is used in examples to distinguish the small letter l from the numeral 1 (one).

The character Ø is used in examples to distinguish the letter O from the numeral 0 (zero).

<Esc>, <CR>, <LF>, <FF>, etc. are control characters. Use a text editor to enter the equivalent of the character. For example, to get <Esc> using a DOS text editor, hold down the **Ctrl** key; and press the **[** (left square bracket) key. Other text editors may vary.

NOTE: **Notes contain important information set off from the text.**

CAUTION: **Caution messages appear before procedures, which, if not observed, could result in loss of data or in damage to equipment.**

WARNING: *Warning messages alert you to a specific procedure or practice, which, if not followed correctly, could cause serious personal injury.*

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Introduction

Thank you for purchasing your TROY Font Memory Card Kit. You have chosen the highest quality MICR (Magnetic Ink Character Recognition) printing solution available today that offers convenience, flexibility, and precision for printing high-quality MICR documents.

The TROY Font Memory Card is designed for use in selected Hewlett-Packard LaserJet printers and features an enhanced collection of MICR, OCR (Optical Character Recognition), and security fonts designed for printing financial documents. The TROY Font Memory Card can be added to a standard Hewlett Packard printer. Refer to the TROY Quick-Start Guide for information on installing the TROY Font Memory Card into a Hewlett-Packard printer and for installing the necessary TROY support files.

TROY Security Fonts

Your TROY Font Memory Card Kit includes a collection of high-quality MICR fonts (E13-B, CMC-7) and other security fonts programmed into the TROY Font Memory Card. See Section 3 – *Using TROY Fonts* for more information. The TROY Security font collection includes the following fonts:

TROY Font	Description
E13-B MICR Font	Used to print the MICR line at the bottom of the check (United States and selected countries)
CMC-7 MICR Font	Used to print the MICR line at the bottom of the check (if your bank of deposit requires this font)
Enhanced Convenience Font	Used to print the convenience amount information on the check (this font is scalable)
Large Convenience Font	Used to print the convenience amount information on the check (this font is non-scalable)
Small Convenience Font	Used to print the convenience amount information on the check (this font is non-scalable)
TROY Reverse Helvetica Font	Used to print names and addresses on the back of transparent envelope windows for use in pressure-seal machines
British Pound and Euro Currency Symbols	Used as the British or European currency symbol for the respective country (replaces the U.S. dollar sign). These symbols can be selected to print in the audit reports.
TROY Barcode and POSTNET Fonts	Used to print several types of industry-standard barcodes for a variety of uses, and also includes a POSTNET font for printing the U.S. postal bar code that represents the 9-digit zip code printed below the postal address
TROY Security Font	Used to print the amount information on the check (English / Spanish) (this font is scalable)
TROY OCR Font (type A and B)	Used to print any information (names, addresses, amounts) that is to be read by automated readers using optical character recognition (this font is scalable)
International Convenience Fonts	Used to print the convenience amount on the check in any one of five languages (available on the TROY Security Printing Solutions CD supplied with your TROY Font Memory Card Kit)

Introduction

The TROY Printer Utility is an easy-to-use Microsoft Windows-based utility designed to assist you with the management of a TROY Font Memory Card. The TROY Printer Utility allows the system administrator to perform the following functions:

- View system information
- Print Windows Security and Barcode demonstration pages
- Print PCL Security/Barcode Font demonstration page
- Obtain technical assistance
- Access the TROY Web site for printer firmware updates, drivers, and product/supplies information.

The TROY Printer Utility is included on the ***TROY Security Printing Solutions*** CD supplied with your TROY Font Memory Card Kit. Follow the instructions in the *TROY Font Memory Card Kit Quick-Start Guide* to install the TROY Printer Utility.

Menu Structure

The user-friendly features of the TROY Printer Utility are conveniently grouped under three pull-down menus as shown below. An arrow (▶) next to the menu selection indicates that additional selections are available for that menu item. It is suggested that you print out this page for use as a convenient reference when using the TROY Printer Utility.

TROY Printer Utility Menu Tree

FILE

Print ▶
    Windows Security Font Demo
    Windows Barcode Font Demo
    PCL Security/Barcode Font Demo

Download File

Exit

RESOURCES

Install New Resources ▶
    Fonts
    Macros/Forms

HELP

TROY Printer Utility Help F1

TROY on the Web

Technical Support

System Information

Firmware Update

About
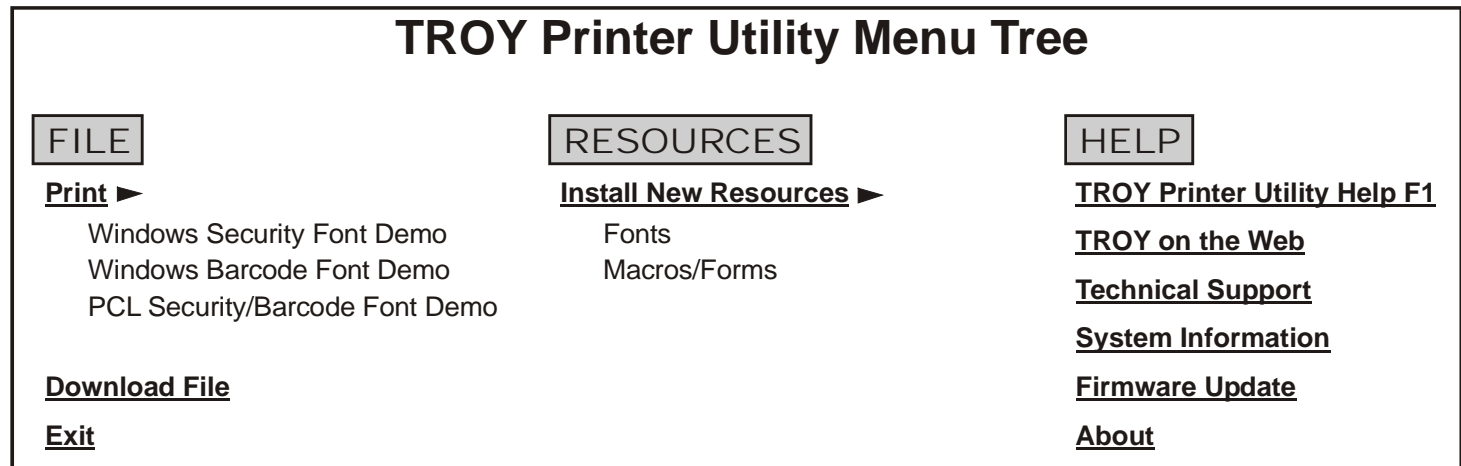
NOTE: The grayed-out menu items displayed in the TROY Printer Utility are for features that apply only to TROY printers and Hewlett-Packard printers that have the TROY MICR Secure Memory Card installed.

Basic Printer Utility Operations

<u>TO ACCESS THE TROY PRINTER UTILITY</u>:

1. Click on the Microsoft Windows **Start** button, select **Programs**, **MICR by TROY**, and then click on the **TROY Printer Utility** icon. The Printer Utility main window will appear.

2. Click on the Hewlett-Packard printer you wish to manage.

TROY Printer Utility

File   Settings   Resources   Help

Select the printer to configure from the following list:	Selected printer location (port):
HP 4250 PCL 5e LaserJet Printer	LPT1:

Selected Printer Information

Admin Password	TROY Security Printing Solution	Windows Printer Driver
	Font Card / DIMM	Winspool
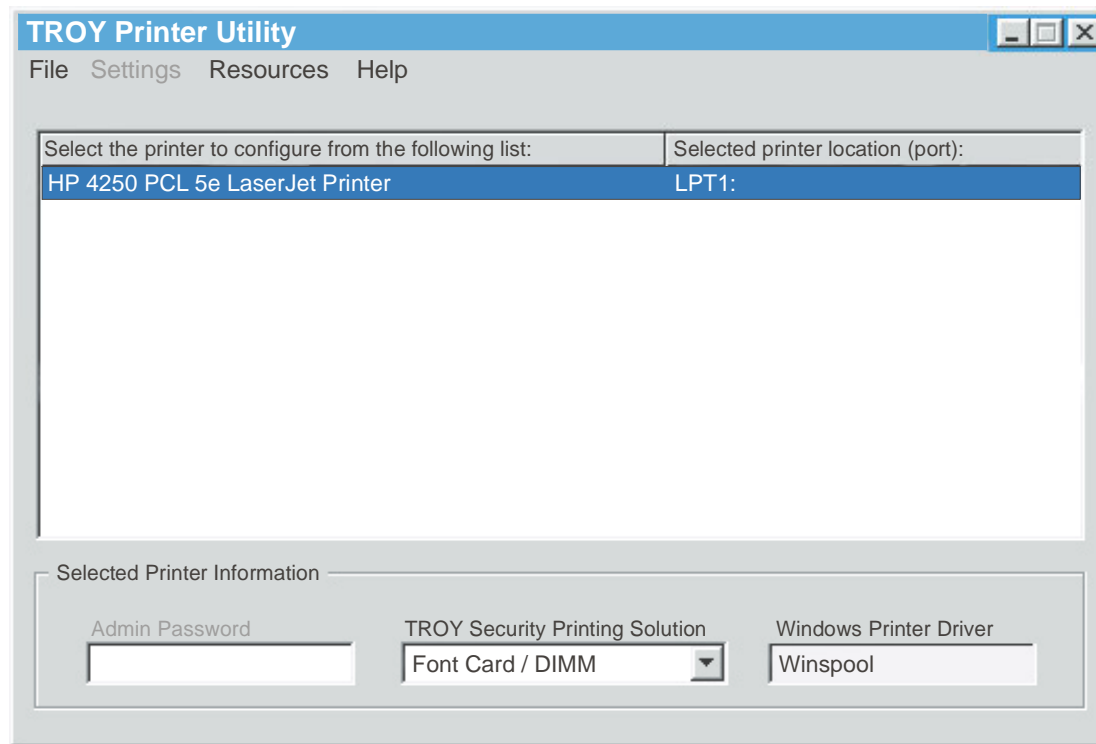
3. Select **Font Card / DIMM** from the TROY Security Printing Solution drop-down menu. For convenience, this setting is saved when you exit the TROY Printer Utility. This option simplifies the TROY Printer Utility interface by allowing access to features that are only available within your product type.

**Printing
Demo Pages**

The TROY Printer Utility provides the ability to generate a Windows Security Font, Windows Barcode Font, and PCL Security/Barcode Font demonstration page. Use the Windows Security Font demonstration page if you are using a Windows-based printing application, or use the PCL Security/Barcode Font demonstration page if you are using a non-Windows-based printing application. Use these demonstration pages to verify the TROY Security fonts generated by your printer.

**Accessing Fonts
Using Non-
Windows
Applications**

If you are using a non-Windows application to print MICR documents, the escape sequence for each font must be programmed into the application in order to "call" each of the selected fonts. The <Esc> character is ASCII character number 27 (hexadecimal number 1B). Refer to Section 3 – *Using TROY Fonts* for the specific escape sequence (displayed above each character map) used to call each of the TROY fonts.

**Verifying
Windows Font
Support**

To verify that the TROY Windows font support files were properly installed on your system, demonstration documents are provided through the TROY Printer Utility in Windows that can be printed out to visually identify all security and/or barcode fonts downloaded to the TROY printer. Make sure your TROY printer is properly setup, powered ON, and is online before printing the Windows Security Font or Windows Barcode Font Demonstration page(s).

TO PRINT THE WINDOWS SECURITY (MICR) FONT DEMONSTRATION PAGE:

1. From the **Main Window**, click on the printer you wish to manage.

2. From the **Main Window**, click on **File**, **Print**, and then click on **Windows Security (MICR) Font Demo**. The printer will automatically print the Windows Security Font Demonstration page (see example on next page).

3. Compare the actual TROY security fonts (the actual fonts generated by your printing system) shown in the right-hand column with the facsimile image of these fonts printed in the center column (a digitized image designed to look exactly like the actual fonts generated by your system – see example on the next page).

   If the support files were properly installed, the actual TROY security and/or barcode fonts displayed in the right-hand column should appear identical to the facsimile fonts displayed in the center column. If the actual fonts do not match the facsimile fonts printed on the demonstration document (fonts not printed correctly or fonts missing on the printout), review the installation steps in this document. If further assistance is required, contact TROY Technical Support.

Verifying Windows Font Support (cont.)

TROY Security Font Collection

Microsoft Windows Test Page

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This document displays how the TROY Security Font Collection should appear when printed through Microsoft Windows (Facsimile Font Image) and how they actually print through your Microsoft Windows printer driver configuration (Actual Printed Font) to a TROY Security Printing Solution.

Compare the fonts printed in the Facsimile Font Image column of this page to the fonts printed in the Actual Printed Font column. If the Windows support files (PCM) were properly installed into the Hewlett Packard PCL 5e printer driver, the fonts in the two columns should match. If the fonts in both columns do not match (fonts in the Actual Printed Fonts column not printed correctly or missing from this page), review the Windows Support File installation steps in the user documentation. If further assistance is needed, please contact TROY Technical Support 1-800-332-6427, or email techsupport@troygroup.com

Font Name	Facsimile Font Image	Actual Printed Font
TROY E-13B	1234567890	1234567890
TROY CMC7	1234567890	1234567890
TROY ECF	01234567890	01234567890
TROY LCF	1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0
TROY SCF	1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0
TROY HELV Rev	1234567890	1234567890
TROY MICRO	MP MP MP	MP MP MP
TROY OCRA	1234567890ABCD	1234567890ABCD
TROY OCRB	1234567890ABCD	1234567890ABCD
TROY Security	1234567890	1234567890

Verifying PCL 5e Communication

The PCL Security/Barcode Font demonstration page can be used to verify PCL 5e communication between the host computer and your printer. If the PCL 5 communication between the host computer and your printer is successful, then the selected demonstration page should print out exactly as shown in the example below.

TO PRINT THE PCL SECURITY/BARCODE FONT DEMONSTRATION PAGE:

1. From the *Main Window*, click on the printer you wish to access.

2. Type in the current administrator password in the password box at the bottom of the *Main Window*. If a password is not set, then leave the password box blank.

3. From the *Main Window*, click on *File*, *Print*, and then click on *PCL Security/Barcode Font Demo*. The printer will automatically print the PCL 5e Security/Barcode Font Demonstration pages (see example below).

TROY SECURITY FONTS

PCL 5e Font Demo Page (non-Microsoft Windows)

Font Name	PCL5e Font Call Escape Sequence	Print Example
TROY E-13 *	\<esc\>(0Q\<esc\>(s1p12.0v0s0b0T \<esc\>(0Q\<esc\>(s0p8.00h8.8v0s0b0T	
TROY CMC7 *	\<esc\>(0Q\<esc\>(s1p12.0v0s0b1T \<esc\>(0Q\<esc\>(s0p8.00h8.8v0s0b1T	
TROY ECF *	\<esc\>(3Q\<esc\>(s1p\<height\>v0s0b0T \<esc\>(3Q\<esc\>(s1p18v0s0b0T	
TROY LCF	\<esc\>(1Q\<esc\>(s0p5.01h16.0v0s0b0T	
TROY SCF	\<esc\>(2Q\<esc\>(s0p6.00h22.0v0s0b0T	
TROY Micro Font	\<esc\>(10U\<esc\>(s0p80h.8v0s33b0T	
TROY Helvetica (Rev)	\<esc\>(9U\<esc\>(s1p\<height\>v0s33b24580T	
TROY OCR-A	\<esc\>(0O\<esc\>(s1p\<height\>v0s0b104T	
TROY OCR-B	\<esc\>(1O\<esc\>(s1p\<height\>v0s0b110T	
TROY Security	\<esc\>(4Q\<esc\>(s1p\<height\>v0s0b0T	

Notes

\<esc\> represents the non-printable escape character (AscII27/Hex1B).

\<height\> represents the point-size value of the scalable font. Value is represented in points .1/72 inch increments.

* Multiple PCL5e font calls are shown for some fonts. Refer to the printer documentation to verify which calls your specific model supports.

** These fonts may not be included with your TROY Security Printing Solution. Refer to the printer document for details. If these fonts are not included, alternate printer-resident fonts will be printed in place of them; this is normal. If you would like to add these fonts to your printer-resident font collection, please contact TROY Group, Inc. at 1-800-332-6427.

Downloading Files to the Printer

The TROY Printer Utility provides the ability to download any PCL or text file directly to the printer without embedding additional information. A download option is provided to enhance the download file (see the *Download File* window for the specific options). To include the advanced option to the download, place a checkmark next to the option. *The advanced download option is provided for advanced users only*.

<u>T<small>O DOWNLOAD A FILE TO THE PRINTER</small></u>:

1. From the *Main Window*, click on the printer you wish to manage.

2. From the *Main Window*, click on *File*, and click on *Download File*.

3. Enter the file name or click on *Browse* to locate the desired file.

4. *For advanced users*: Place a checkmark next to the download option if you wish to include the additional data with the download file. *For normal use, it is recommended that the checkbox be left blank*.

5. Click on *Download* to send the file to the printer's memory. Click on *OK* to finish.

6. Click on *OK* to continue.
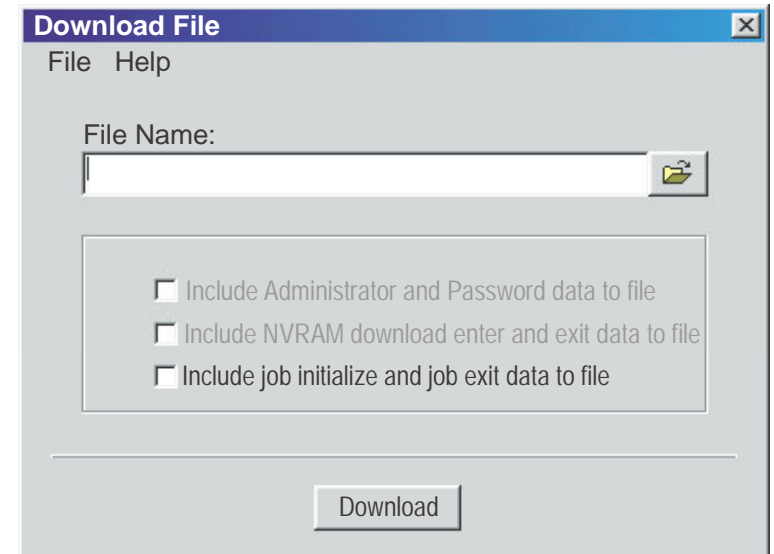
**Obtaining
Technical
Assistance**

The TROY Printer Utility provides several help screens to guide you through the features and functions of your TROY Font Memory Card. TROY technical support is available to assist you with any questions concerning the setup, operation, and maintenance of your TROY Font Memory Card. Specific system information about the configuration of your TROY product is also available through the TROY Printer Utility. You are also encouraged to visit the TROY Web site for latest FAQs (Frequently Asked Questions), information on the latest TROY products, and for ordering MICR toner and other printing supplies.

TO VIEW TECHNICAL SUPPORT INFORMATION:

From the *Main Window*, click on *Help*, and then click on *Technical Support* to view the TROY Technical Support HTML page for telephone numbers and hours of business.

TO VIEW INFORMATION ON THE TROY WEB SITE:

From the *Main Window*, click on *Help*, and then click on *TROY on the Web* to access the TROY web site. Click on the *Support and Downloads* button at the top of the web page to view the available topics. You can access the TROY Web site directly at http://www.troygroup.com.

TO VIEW ON-SCREEN HELP FOR THE TROY PRINTER UTILITY:

From the *Main Window*, click on *Help*, and then click on *TROY Printer Utility Help F1* to view the Printer Utility help documents. You can press the *F1* key at any time while using the TROY Printer Utility to access the help screens.

TO VIEW INFORMATION ABOUT THE PRINTER UTILITY:

From the *Main Window*, click on *Help*, and then click on *About* to view the version level and other information about the TROY Printer Utility.

TO VIEW SYSTEM INFORMATION:

From the *Main Window*, click on *Help*, and then click on *System Information* to view the version level and other information about your computer and printer's hardware and software environment.

Introduction

The TROY MICR E-13B and CMC-7 MICR fonts have been specifically engineered for your TROY Security Printing Solution to ensure the highest quality MICR printing in the industry. The TROY font collection provides seamless integration and security within your Windows-based check printing application. All TROY fonts are permanently programmed into the TROY Font Memory Card to ensure consistent high-quality MICR printing and to prevent unauthorized use of these fonts on another printing system. Your TROY Security Printing Solution includes the following fonts:

- TROY MICR Font (E-13B and CMC-7)
- TROY Security Font (English and Spanish)
- TROY Convenience Fonts (Enhanced, Large, and Small)
- TROY Reverse Helvetica Font
- TROY OCR Fonts (type A and B)
- British Pound and Euro symbols
- TROY POSTNET and Barcode Fonts

Accessing and Using TROY Fonts

The following paragraphs provide some basic information for accessing and using the TROY fonts. It is important that these fonts are kept secure to prevent unauthorized use and that the fonts remain unaltered to ensure accurate rendering by your printer. All TROY fonts are permanently programmed into the TROY Font Memory Card and cannot be directly accessed through the printer control panel or other external means.

Accessing TROY Fonts Using Windows Applications

To access the TROY fonts in a Windows environment, you must first install the Windows printer driver for the model of HP printer being installed. Follow the instructions in *TROY Font Memory Card Kit Quick-Start Guide* (provided on the **TROY Security Printing Solutions** CD) to install the printer driver and Windows support files, enabling you to select these fonts from any Windows-based application. To print the TROY E13-B and CMC-7 MICR fonts, your printer must be set to MICR enabled mode, and a TROY MICR toner cartridge must be installed in the printer. Many commercial MICR check-printing applications are pre-programmed to access the TROY MICR fonts.

Accessing TROY Fonts Using Non-Windows Applications

If you are using a non-Windows application to print MICR documents, the escape sequence for each font must be programmed into your check-printing application in order to "call" each of the selected fonts. The <Esc> character is ASCII character number 27 (hexadecimal number 1B). Refer to the end of this section for each escape sequence (displayed above each character map) used to call each TROY font.

Using TROY MICR Fonts

The E-13B MICR font (TROY E-13B, TROY CMC-7) can be used for printing the MICR line in many countries, including the United States. In some European and Latin American countries, the CMC-7 MICR font is used instead. MICR document processing requires that the MICR characters be precise in size, shape, and spacing. For this reason, the TROY MICR font is supplied as a TrueType font; it must not be altered by scaling or other size manipulation. TROY can provide customer support for your MICR applications only if you use the supplied TROY MICR fonts.

Using the Convenience Amount Fonts

Your TROY Security Printing Solution includes a large, small and enhanced convenience amount font (TROY ECF, TROY LCF, TROY SCF). These fonts consist of numbers with their alphabetic spellings placed directly below the numerical character. These fonts are designed for use in the *Legal Amount* field only (located directly below the *Payee* field). You can enter alphanumeric symbols representing the amount of the check into this field.

Using the TROY Security Fonts

The TROY Security font (TROY SECURITY, TROY SECURITY SPANISH) is designed to prevent fraudulent alteration to the *Amount* field on the check. The font consists of numbers with their alphabetic spellings placed directly below the numerical character with a wavy lined pattern running through each character. These fonts are designed for use in the *Legal Amount* field only (located directly below the *Payee* field on the check). You can enter numeric symbols representing the amount of the check into this field. During document processing, convenience amounts may be visually read and encoded on the check by bank personnel. In this case, a large *Security Amount* font may best meet your bank's requirements.

Using the TROY OCR Fonts

The TROY OCR fonts (TROY OCR-A AND TROY OCR-B) are used to print any information (names, addresses, amounts) on the check that is to be read by automated readers using optical character recognition.

Using the Reverse Helvetica Font

The TROY Reverse Helvetica font is used to print names and addresses on the back of transparent envelope windows for use in pressure-seal machines.

Using the TROY POSTNET Font

The POSTNET (Postal Numeric Encoding Technique) font (TROY POSTNET) is used to represent the nine-digit postal zip code below the postal address line. Using the POSTNET font on your mailing envelopes and postcards will significantly decrease postal processing time and reduce the chance of errors when manual data entry is required at the post office.

Using the British Pound and Euro Symbols

The British Pound and European currency symbols are used in place of the U.S. dollar sign for the respective European country and can be selected to print in the audit reports.

Using Printer Fonts and Screen Fonts

In addition to the TROY *printer* fonts that are permanently programmed into the TROY Font Memory Card, the TROY *screen* fonts have been developed for screen display use only as a visual reference and for making positional adjustments to the MICR line. The TROY *screen* fonts display differently than the actual *printer* fonts in order to prevent unauthorized printing using the MICR *screen* fonts on other Windows-installed printers.

If the E-13B MICR *screen* font is used for printing, the inversely printed (white characters on a black background) MICR *screen* font will not be readable by the bank reader/sorter machines. The uniquely displayed *screen* fonts ensure that the MICR font printed on your MICR documents is generated by the TROY Font Memory Card and <u>not</u> by the Windows operating system using the resident TrueType™ font. The TROY *screen* fonts are provided on the **TROY Security Printing Solutions** CD supplied with your TROY Font Memory Card product.

TROY E-13B Screen Font:

TROY CMC-7 Screen Font:

TROY LCF Screen Font:

TROY SCF Screen Font:

TROY ECF Screen Font:

TROY Security Screen Font:

TROY Messaging Screen Font:

TROY AutoProtect Screen Font:

TROY OCR-A Screen Font:

TROY OCR-B Screen Font:

TROY Reverse Helvetica Screen Font:

TROY Microprint Screen Font:

TROY Code 128 Screen Font:

TROY Code 2 of 5 Screen Font:

TROY Code 3 of 9 Screen Font:

TROY EAN-8 Screen Font:

TROY EAN-13 Screen Font:

TROY POSTNET Screen Font:

TROY Reverse POSTNET Screen Font:

TROY UPC-A Screen Font:

TROY UPC-E Screen Font:

MICR Font Guidelines

The TROY E-13B and CMC-7 MICR fonts were developed using strict specifications designed specifically for high-speed magnetic-read processing. To maintain these strict specifications, the TROY MICR fonts were designed as <u>non-scalable</u> fonts (fixed fonts) that are fixed in pitch (spacing) and point size (height). Because Windows TrueType™ technology allows fonts to be scalable by changing the point size, it is imperative to maintain the 12-point size of the MICR fonts installed in Windows. Selecting a point size other than 12-point for the MICR font in Windows will not visibly enlarge or reduce the size of the characters; however, the horizontal spacing <u>will be</u> affected. Any alteration to the spacing of the characters will result in incorrect placement of the MICR characters in the MICR line at the bottom of your checks, causing your financial documents to be rejected by the bank.

The Convenience Amount fonts were also designed as non-scalable fonts, but can be changed (increased or decreased) from the default point size to meet your check printing requirements. Changing the point size of a fixed font in Windows will only affect the horizontal spacing of the characters and not affect the vertical size of the characters. The TROY Enhanced Convenience Amount font and TROY Security font were designed as scalable fonts that can be changed (increased or decreased) from the default point size to meet your check printing requirements.

<u>NOTE</u>: It is highly recommended that you verify the MICR line at the bottom of your printed checks using the TROY MICR Document Template (p/n 54-17373-001) to verify the positioning of each character. Refer to the TROY MICR Basics Handbook for details (provided on the *TROY Security Printing Solutions* CD supplied with your TROY Font Memory Card product).

Font Character Mapping

Each character or symbol in a font set corresponds to a specific ASCII (American Standard Code for Information Interchange) number (e.g., the capital letter "A" = ASCII number 65). Pressing a key on your computer keyboard automatically generates the ASCII number (32 through 127) associated with the character or symbol displayed on the key. Likewise, any character or symbol not represented on your computer keyboard (ASCII numbers above 127) can be accessed by manually entering the associated ASCII number using the numeric keypad.

The fonts provided on the *TROY Security Printing Solutions* CD have each of the characters and symbols in each font set (shown on the following pages) "mapped" (associated) to standard computer keyboard characters using the corresponding ASCII number for each character and symbol on the keyboard.

For example, the transit symbol (one of the industry-standard symbols used in a MICR line at the bottom of a check) contained in the TROY E-13B MICR character table (shown on page 9) does not exist on a standard computer keyboard but has been "mapped" to the standard ASCII keyboard capital letter "A", designated as ASCII number 65.

Therefore, after loading and then selecting the TROY E-13B MICR Font, typing the capital letter "A" on your computer keyboard will produce the MICR transit symbol instead of the capital letter "A". The TROY E-13B character table (shown on page 9) associates the transit symbol with ASCII number 65 (the same ASCII number used for the capital letter "A" if you had selected a standard ASCII font set instead of the TROY E-13B MICR font set).

Determining a Character Mapping

To determine which key on your computer keyboard that a TROY character or symbol is "mapped" to, simply compare the ASCII number of the selected TROY character or symbol to the same ASCII number listed in the *Standard ASCII Character Map* (shown on the next page) to determine which keyboard key can be used to access the selected TROY character or symbol.

Accessing Unmapped Characters

Some of the font sets provided on the *TROY Security Printing Solutions* CD contain more characters or symbols than can be "mapped" to the available keys on a standard computer keyboard. In this case, these characters can be accessed by manually entering the ASCII number (see example at right) designated for each character (refer to the character tables on the following pages). The hexadecimal number shown below the ASCII number is used for programming mainframe computers.
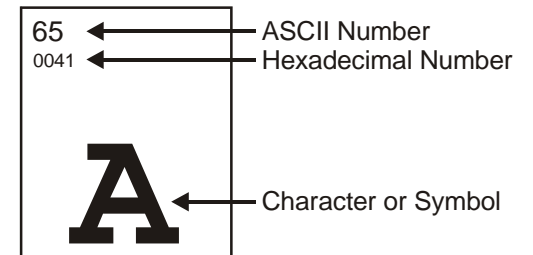
To access a character or symbol that is <u>not</u> "mapped" to one of the keys on your Windows computer keyboard, you can manually enter the ASCII number by holding down the **ALT** key on your keyboard, entering the associated ASCII number for the character you wish to access, and then releasing the **ALT** key.

<u>NOTE</u>**: You <u>must</u> use the numerical keypad on your keyboard to enter the ASCII number. The number keys along the top of the keyboard will not work for this application.**

Standard ASCII Character Set (reference only)

24	25	26	27	28	29	30	31	32 0020	33 0021 !	34 0022 "	35 0023 #
36 0024 $	37 0025 %	38 0026 &	39 0027 '	40 0028 (	41 0029)	42 002A *	43 002B +	44 002C ,	45 002D -	46 002E .	47 002F /
48 0030 0	49 0031 1	50 0032 2	51 0033 3	52 0034 4	53 0035 5	54 0036 6	55 0037 7	56 0038 8	57 0039 9	58 003A :	59 003B ;
60 003C <	61 003D =	62 003E >	63 003F ?	64 0040 @	65 0041 A	66 0042 B	67 0043 C	68 0044 D	69 0045 E	70 0046 F	71 0047 G
72 0048 H	73 0049 I	74 004A J	75 004B K	76 004C L	77 004D M	78 004E N	79 004F O	80 0050 P	81 0051 Q	82 0052 R	83 0053 S
84 0054 T	85 0055 U	86 0056 V	87 0057 W	88 0058 X	89 0059 Y	90 005A Z	91 005B [	92 005C \	93 005D]	94 005E ^	95 005F _
96 0060 `	97 0061 a	98 0062 b	99 0063 c	100 0064 d	101 0065 e	102 0066 f	103 0067 g	104 0068 h	105 0069 i	106 006A j	107 006B k
108 006C l	109 006D m	110 006E n	111 006F o	112 0070 p	113 0071 q	114 0072 r	115 0073 s	116 0074 t	117 0075 u	118 0076 v	119 0077 w
120 0078 x	121 0079 y	122 007A z	123 007B {	124 007C |	125 007D }	126 007E ~	127	128	129	130	131

TROY MICR E-13B 12-Point Font (Troy E-13B)

```
<Esc>(ØQ<Esc>(s1p12vØsØbØT
```

24	25	26	27	28	29	30	31	32 F020	33	34	35
36 F024	37	38 F026	39	40	41	42	43	44	45 F02D	46	47 F02F
48 F030	49 F031	50 F032	51 F033	52 F034	53 F035	54 F036	55 F037	56 F038	57 F039	58 F03A	59 F03B
60	61 F03D	62	63	64	65 F041	66 F042	67 F043	68 F044	69	70	71
72	73	74	75	76	77	78	79 F04F	80	81	82	83
84 F054	85	86	87	88	89	90	91	92	93	94	95
96	97	98	99	100	101	102	103	104	105	106	107
108	109	110	111 F06F	112	113	114	115	116 F074	117	118	119

TROY MICR CMC-7 12-Point Font

(Troy CMC7)

`<Esc>(ØQ<Esc>(s1p12vØsØb1T`

24	25	26	27	28	29	30	31	32 F020	33	34	35
36	37	38	39	40	41	42	43	44	45	46	47
48 F030	49 F031	50 F032	51 F033	52 F034	53 F035	54 F036	55 F037	56 F038	57 F039	58	59
60	61	62	63	64	65 F041	66 F042	67 F043	68 F044	69 F045	70	71

TROY Enhanced Convenience Amount Font

(Troy ECF)

`<Esc>(3Q<Esc>(s1p☐vØsØb1ØT`   ☐ = desired point size

24	25	26	27	28	29	30	31	32 F020	33	34	35
36 F024	37	38	39	40	41	42 F02A	43	44 F02C	45	46 F02E	47
48 F030 ZERO	49 F031 ONE	50 F032 TWO	51 F033 THREE	52 F034 FOUR	53 F035 FIVE	54 F036 SIX	55 F037 SEVEN	56 F038 EIGHT	57 F039 NINE	58	59
60	61	62	63	64	65 F041 CTS	66 F042 CTS	67 F043 CTS	68 F044 CTS	69 F045 CTS	70 F046 CTS	71 F047 CTS
72 F048 CTS	73 F049 CTS	74 F04A CTS	75	76	77	78	79	80	81	82	83

NOTE: The TROY Enhanced Convenience Amount font can be used in place of the TROY Convenience Amount font in the legal amount field of the check. To write the cents amount on the check, type the capital letter that corresponds to the smaller cent characters shown in the example above (i.e., A=0, B=1, C=2).

TROY Large Convenience Amount 18-Point Font (Troy LCF)

`<Esc>(1Q<Esc>(sØp5.Øh16.ØvØsØbØT`

Key	Char	Key	Char	Key	Char	Key	Char
0	**0** ZERO	5	**5** FIVE	$	**$** DOLLAR	%	**€** EURO
1	**1** ONE	6	**6** SIX	*	**✳** ASK	&	**€**
2	**2** TWO	7	**7** SEVEN	,	**,** COM	C	**¢** CENT
3	**3** THREE	8	**8** EIGHT	.	**.** PER		
4	**4** FOUR	9	**9** NINE				

TROY Small Convenience Amount 24-Point Font (Troy SCF)

`<Esc>(2Q<Esc>(sØp6.ØØh22.ØvØsØbØT`

Key	Char	Key	Char	Key	Char	Key	Char
0	**0** ZERO	5	**5** FIVE	$	**$** DOLLAR	%	**€** EURO
1	**1** ONE	6	**6** SIX	*	**✳** ASK	&	**€**
2	**2** TWO	7	**7** SEVEN	,	**,** COM		
3	**3** THREE	8	**8** EIGHT	.	**.** PER		
4	**4** FOUR	9	**9** NINE				

TROY Security Font (Troy Security)

`<Esc>(4Q<Esc>(s1p☐vØsØbØT` ☐ = desired point size

TROY Security Font (Spanish) (Troy Security Spanish)

`<Esc>(4Q<Esc>(s1p☐vØsØb4T` ☐ = desired point size

NOTE: The TROY Security Spanish Font is included in the International Font Collection provided on the *TROY Security Printing Solutions* CD.

TROY Reverse Helvetica Font (Troy Helvetica (Rev))

**TROY OCR-A
(Troy OCR-A)**

`<Esc>(Ø0<Esc>(s1p☐vØsØb1Ø4T`   ☐ `= desired point size`

24	25	26	27	28	29	30	31	32 0020	33 0021	34 0022	35 0023
									!	▼▼	#
36 0024	37 0025	38 0026	39 0027	40 0028	41 0029	42 002A	43 002B	44 002C	45 002D	46 002E	47 002F
⇌	%	&	'	(	)	*	+	¬	–	.	/
48 0030	49 0031	50 0032	51 0033	52 0034	53 0035	54 0036	55 0037	56 0038	57 0039	58 003A	59 003B
0	1	2	3	4	5	6	7	8	9	:	;
60 003C	61 003D	62 003E	63 003F	64 0040	65 0041	66 0042	67 0043	68 0044	69 0045	70 0046	71 0047
<	=	>	?	@	A	B	C	D	E	F	G
72 0048	73 0049	74 004A	75 004B	76 004C	77 004D	78 004E	79 004F	80 0050	81 0051	82 0052	83 0053
H	I	J	K	L	M	N	O	P	Q	R	S
84 0054	85 0055	86 0056	87 0057	88 0058	89 0059	90 005A	91 005B	92 005C	93 005D	94 005E	95 005F
T	U	V	W	X	Y	Z	[	\	]	^	Ч
96 0060	97 0061	98 0062	99 0063	100 0064	101 0065	102 0066	103 0067	104 0068	105 0069	106 006A	107 006B
⌐	a	b	c	d	e	f	g	h	i	j	k
108 006C	109 006D	110 006E	111 006F	112 0070	113 0071	114 0072	115 0073	116 0074	117 0075	118 0076	119 0077
l	m	n	o	p	q	r	s	t	u	v	w
120 0078	121 0079	122 007A	123 007B	124 007C	125 007D	126 007E	127 007F	128 20AC	129	130	131
x	y	z	{	|	}	♪	■	☐			
132	133	134	135	136	137	138	139 2039	140	141	142	143
							<				
144	145 2018	146 2019	147 201C	148 201D	149	150 2013	151 2014	152	153	154	155 203A
	'	'	▼▼	▼▼		–	—				>

TROY OCR-A (continued)

156	157	158	159	160 00A0	161	162 00A2 €	163 00A3 £	164	165 00A5 ¥	166	167
168	169	170	171	172	173	174	175	176	177	178	179
180	181	182	183 00B7 ■	184 00B8 ¬	185	186	187	188	189	190	191 00BF ¿
192	193	194	195	196 00C4 Ä	197 00C5 Å	198 00C6 Æ	199	200	201	202	203
204	205	206	207	208	209 00D1 Ñ	210	211	212	213	214 00D6 Ö	215
216 00D8 Ø	217	218	219	220 00DC Ü	221	222	223	224	225	226	227

NOTE: This OCR font must be used at the designated point size to ensure optical readability.

- **Size I   – must use 12-point size (upper and lower case characters can be used)**
- **Size III – must use 16-point size (only upper case characters can be used)**
- **Size IV – must use 20-point size (only upper case characters can be used)**

**TROY OCR-B
(Troy OCR-B)**

`<Esc>(1O<Esc>(s1p☐vØsØb11ØT        ☐ = desired point size`

24	25	26	27	28	29	30	31	32 0020	33 0021	34 0022	35 0023
									!	"	#
36 0024	37 0025	38 0026	39 0027	40 0028	41 0029	42 002A	43 002B	44 002C	45 002D	46 002E	47 002F
$	%	&	'	(	)	*	+	,	-	.	/
48 0030	49 0031	50 0032	51 0033	52 0034	53 0035	54 0036	55 0037	56 0038	57 0039	58 003A	59 003B
0	1	2	3	4	5	6	7	8	9	:	;
60 003C	61 003D	62 003E	63 003F	64 0040	65 0041	66 0042	67 0043	68 0044	69 0045	70 0046	71 0047
<	=	>	?	@	A	B	C	D	E	F	G
72 0048	73 0049	74 004A	75 004B	76 004C	77 004D	78 004E	79 004F	80 0050	81 0051	82 0052	83 0053
H	I	J	K	L	M	N	O	P	Q	R	S
84 0054	85 0055	86 0056	87 0057	88 0058	89 0059	90 005A	91 005B	92 005C	93 005D	94 005E	95 005F
T	U	V	W	X	Y	Z	[	\	]	^	
96 0060	97 0061	98 0062	99 0063	100 0064	101 0065	102 0066	103 0067	104 0068	105 0069	106 006A	107 006B
`	a	b	c	d	e	f	g	h	i	j	k
108 006C	109 006D	110 006E	111 006F	112 0070	113 0071	114 0072	115 0073	116 0074	117 0075	118 0076	119 0077
l	m	n	o	p	q	r	s	t	u	v	w
120 0078	121 0079	122 007A	123 007B	124 007C	125 007D	126 007E	127 007F	128	129	130 201A	131
x	y	z	{	|	}	~	■			,	
132 201E	133 2026	134 2020	135 2021	136 02C6	137 2030	138 0160	139 2039	140 0152	141	142 017D	143
„	…	†	‡	^	‰	Š	‹	Œ		Ž	
144	145 2018	146 2019	147 201C	148 201D	149 2022	150 2013	151 2014	152 02DC	153 2122	154 0161	155 203A
	'	'	"	"	■	–	—	~	m	š	›

TROY OCR-B
(continued)

156 0153 œ	157	158 017E Ž	159 0178 Ÿ	160 00A0	161 00A1 ¡	162 00A2 ¢	163 00A3 £	164 00A4 ¤	165 00A5 ¥	166 00A6 ¦	167 00A7 §
168 00A8 ¨	169	170 00AA a	171 00AB «	172 00AC ¬	173 00AD —	174	175 00AF ¯	176 00B0 IJ	177 00B1 ±	178	179
180 00B4 ´	181 00B5 µ	182	183 00B7 ·	184 00B8 ,	185	186 00BA ij	187 00BB »	188	189	190	191 00BF ¿
192 00C0 À	193 00C1 Á	194 00C2 Â	195 00C3 Ã	196 00C4 Ä	197 00C5 Å	198 00C6 Æ	199 00C7 Ç	200 00C8 È	201 00C9 É	202 00CA Ê	203 00CB Ë
204 00CC Ì	205 00CD Í	206 00CE Î	207 00CF Ï	208 00D0 Ð	209 00D1 Ñ	210 00D2 Ò	211 00D3 Ó	212 00D4 Ô	213 00D5 Õ	214 00D6 Ö	215 00D7 ×
216 00D8 Ø	217 00D9 Ù	218 00DA Ú	219 00DB Û	220 00DC Ü	221 00DD Ý	222 00DE Þ	223 00DF ß	224 00E0 à	225 00E1 á	226 00E2 â	227 00E3 ã
228 00E4 ä	229 00E5 å	230 00E6 æ	231 00E7 ç	232 00E8 è	233 00E9 é	234 00EA ê	235 00EB ë	236 00EC ì	237 00ED í	238 00EE î	239 00EF ï
240 00F0 ð	241 00F1 ñ	242 00F2 ò	243 00F3 ó	244 00F4 ô	245 00F5 õ	246 00F6 ö	247 00F7 ÷	248 00F8 ø	249 00F9 ù	250 00FA ú	251 00FB û
252 00FC ü	253 00FD ý	254 00FE þ	255 00FF ÿ	256 E000	257 E001	258 E002					

NOTE: This OCR font must be used at the designated point size to ensure optical readability.

▨   **Size I – must use 10-point size (upper and lower case characters can be used)**
▨   **Size III – (not supported)**
▨   **Size IV – must use 16-point size (upper and lower case characters can be used)**

TROY UPC-A Barcode

```
<Esc>(8Y<Esc>(s1p□vØsØb246ØØT        □ = desired height
```

32　20	33　21	34　22	35　23	36　24	37　25	38　26	39　27	40　28	41　29
42　2A	43　2B	44　2C	45　2D	46　2E	47　2F	48　30	49　31	50　32	51　33
52　34	53　35	54　36	55　37	56　38	57　39	58　3A	59　3B	60　3C	61　3D
62　3E	63　3F	64　40	65　41	66　42	67　43	68　44	69　45	70　46	71　47
72　48	73　49	74　4A	75　4B	76　4C	77　4D	78　4E	79　4F	80　50	81　51
82　52	83　53	84　54	85　55	86　56	87　57	88　58	89　59	90　5A	91　5B
92　5C	93　5D	94　5E	95　5F	96　60	97　61	98　62	99　63	100　64	101　65
102　66	103　67	104　68	105　69	106　6A	107　6B	108　6C	109　6D	110　6E	111　6F
112　70	113　71	114　72	115　73	116　74	117　75	118　76	119　77	120　78	121　79
122　7A	123　7B	124　7C	125　7D	126　7E	127　7F	128　80	129　81	130　82	131　83
132　84	133　85	134　86	135　87	136　88	137　89	138　8A	139　8B	140　8C	141　8D
142　8E	143　8F	144　90	145　91	146　92	147　93	148　94	149　95	150　96	151　97
152　98	153　99	154　9A	155　9B	156　9C	157　9D	158　9E	159　9F	160　A0	161　A1
162　A2	163　A3	164　A4	165　A5	166　A6	167　A7	168　A8	169　A9	170　AA	171　AB
172　AC	173　AD	174　AE	175　AF	176　B0	177　B1	178　B2	179　B3	180　B4	181　B5
182　B6	183　B7	184　B8	185　B9	186　BA	187　BB	188　BC	189　BD	190　BE	191　BF

TROY UPC-E Barcode

```
<Esc>(8Y<Esc>(s1p□vØsØb2461ØT          □ = desired height
```

32 20	33 21	34 22	35 23	36 24	37 25	38 26	39 27	40 28	41 29
42 2A	43 2B	44 2C	45 2D	46 2E	47 2F	48 30	49 31	50 32	51 33
52 34	53 35	54 36	55 37	56 38	57 39	58 3A	59 3B	60 3C	61 3D
62 3E	63 3F	64 40	65 41	66 42	67 43	68 44	69 45	70 46	71 47
72 48	73 49	74 4A	75 4B	76 4C	77 4D	78 4E	79 4F	80 50	81 51
82 52	83 53	84 54	85 55	86 56	87 57	88 58	89 59	90 5A	91 5B
92 5C	93 5D	94 5E	95 5F	96 60	97 61	98 62	99 63	100 64	101 65
102 66	103 67	104 68	105 69	106 6A	107 6B	108 6C	109 6D	110 6E	111 6F
112 70	113 71	114 72	115 73	116 74	117 75	118 76	119 77	120 78	121 79
122 7A	123 7B	124 7C	125 7D	126 7E	127 7F	128 80	129 81	130 82	131 83
132 84	133 85	134 86	135 87	136 88	137 89	138 8A	139 8B	140 8C	141 8D
142 8E	143 8F	144 90	145 91	146 92	147 93	148 94	149 95	150 96	151 97
152 98	153 99	154 9A	155 9B	156 9C	157 9D	158 9E	159 9F	160 A0	161 A1
162 A2	163 A3	164 A4	165 A5	166 A6	167 A7	168 A8	169 A9	170 AA	171 AB
172 AC	173 AD	174 AE	175 AF	176 B0	177 B1	178 B2	179 B3	180 B4	181 B5
182 B6	183 B7	184 B8	185 B9	186 BA	187 BB	188 BC	189 BD	190 BE	191 BF

TROY EAN-8 Barcode

`<Esc>(8Y<Esc>(s1p☐vØsØb2462ØT`   ☐ = desired height

32 20	33 21	34 22	35 23	36 24	37 25	38 26	39 27	40 28	41 29
42 2A	43 2B	44 2C	45 2D	46 2E	47 2F	48 30	49 31	50 32	51 33
52 34	53 35	54 36	55 37	56 38	57 39	58 3A	59 3B	60 3C	61 3D
62 3E	63 3F	64 40	65 41	66 42	67 43	68 44	69 45	70 46	71 47
72 48	73 49	74 4A	75 4B	76 4C	77 4D	78 4E	79 4F	80 50	81 51
82 52	83 53	84 54	85 55	86 56	87 57	88 58	89 59	90 5A	91 5B
92 5C	93 5D	94 5E	95 5F	96 60	97 61	98 62	99 63	100 64	101 65
102 66	103 67	104 68	105 69	106 6A	107 6B	108 6C	109 6D	110 6E	111 6F
112 70	113 71	114 72	115 73	116 74	117 75	118 76	119 77	120 78	121 79
122 7A	123 7B	124 7C	125 7D	126 7E	127 7F	128 80	129 81	130 82	131 83
132 84	133 85	134 86	135 87	136 88	137 89	138 8A	139 8B	140 8C	141 8D
142 8E	143 8F	144 90	145 91	146 92	147 93	148 94	149 95	150 96	151 97
152 98	153 99	154 9A	155 9B	156 9C	157 9D	158 9E	159 9F	160 A0	161 A1
162 A2	163 A3	164 A4	165 A5	166 A6	167 A7	168 A8	169 A9	170 AA	171 AB
172 AC	173 AD	174 AE	175 AF	176 B0	177 B1	178 B2	179 B3	180 B4	181 B5
182 B6	183 B7	184 B8	185 B9	186 BA	187 BB	188 BC	189 BD	190 BE	191 BF

TROY EAN-13 Barcode

`<Esc>(8Y<Esc>(s1p☐v0s0b24630T`   ☐ = desired height

32	20	33	21	34	22	35	23	36	24	37	25	38	26	39	27	40	28	41	29
42	2A	43	2B	44	2C	45	2D	46	2E	47	2F	48	30	49	31	50	32	51	33
52	34	53	35	54	36	55	37	56	38	57	39	58	3A	59	3B	60	3C	61	3D
62	3E	63	3F	64	40	65	41	66	42	67	43	68	44	69	45	70	46	71	47
72	48	73	49	74	4A	75	4B	76	4C	77	4D	78	4E	79	4F	80	50	81	51
82	52	83	53	84	54	85	55	86	56	87	57	88	58	89	59	90	5A	91	5B
92	5C	93	5D	94	5E	95	5F	96	60	97	61	98	62	99	63	100	64	101	65
102	66	103	67	104	68	105	69	106	6A	107	6B	108	6C	109	6D	110	6E	111	6F
112	70	113	71	114	72	115	73	116	74	117	75	118	76	119	77	120	78	121	79
122	7A	123	7B	124	7C	125	7D	126	7E	127	7F	128	80	129	81	130	82	131	83
132	84	133	85	134	86	135	87	136	88	137	89	138	8A	139	8B	140	8C	141	8D
142	8E	143	8F	144	90	145	91	146	92	147	93	148	94	149	95	150	96	151	97
152	98	153	99	154	9A	155	9B	156	9C	157	9D	158	9E	159	9F	160	A0	161	A1
162	A2	163	A3	164	A4	165	A5	166	A6	167	A7	168	A8	169	A9	170	AA	171	AB
172	AC	173	AD	174	AE	175	AF	176	B0	177	B1	178	B2	179	B3	180	B4	181	B5
182	B6	183	B7	184	B8	185	B9	186	BA	187	BB	188	BC	189	BD	190	BE	191	BF

**TROY BC25
Barcode**

```
<Esc>(4Y<Esc>(s1p□vØsØb2464ØT        □ = desired height
```

32 20	33 21	34 22	35 23	36 24	37 25	38 26	39 27	40 28	41 29
42 2A	43 2B	44 2C	45 2D	46 2E	47 2F	48 30	49 31	50 32	51 33
52 34	53 35	54 36	55 37	56 38	57 39	58 3A	59 3B	60 3C	61 3D
62 3E	63 3F	64 40	65 41	66 42	67 43	68 44	69 45	70 46	71 47
72 48	73 49	74 4A	75 4B	76 4C	77 4D	78 4E	79 4F	80 50	81 51
82 52	83 53	84 54	85 55	86 56	87 57	88 58	89 59	90 5A	91 5B
92 5C	93 5D	94 5E	95 5F	96 60	97 61	98 62	99 63	100 64	101 65
102 66	103 67	104 68	105 69	106 6A	107 6B	108 6C	109 6D	110 6E	111 6F
112 70	113 71	114 72	115 73	116 74	117 75	118 76	119 77	120 78	121 79
122 7A	123 7B	124 7C	125 7D	126 7E	127 7F	128 80	129 81	130 82	131 83
132 84	133 85	134 86	135 87	136 88	137 89	138 8A	139 8B	140 8C	141 8D
142 8E	143 8F	144 90	145 91	146 92	147 93	148 94	149 95	150 96	151 97
152 98	153 99	154 9A	155 9B	156 9C	157 9D	158 9E	159 9F	160 A0	161 A1
162 A2	163 A3	164 A4	165 A5	166 A6	167 A7	168 A8	169 A9	170 AA	171 AB
172 AC	173 AD	174 AE	175 AF	176 B0	177 B1	178 B2	179 B3	180 B4	181 B5
182 B6	183 B7	184 B8	185 B9	186 BA	187 BB	188 BC	189 BD	190 BE	191 BF

TROY BC39 Barcode

```
<Esc>(ØY<Esc>(s1p☐vØsØb2467ØT          ☐ = desired height
```

32 20	33 21	34 22	35 23	36 24	37 25	38 26	39 27	40 28	41 29
42 2A	43 2B	44 2C	45 2D	46 2E	47 2F	48 30	49 31	50 32	51 33
52 34	53 35	54 36	55 37	56 38	57 39	58 3A	59 3B	60 3C	61 3D
62 3E	63 3F	64 40	65 41	66 42	67 43	68 44	69 45	70 46	71 47
72 48	73 49	74 4A	75 4B	76 4C	77 4D	78 4E	79 4F	80 50	81 51
82 52	83 53	84 54	85 55	86 56	87 57	88 58	89 59	90 5A	91 5B
92 5C	93 5D	94 5E	95 5F	96 60	97 61	98 62	99 63	100 64	101 65
102 66	103 67	104 68	105 69	106 6A	107 6B	108 6C	109 6D	110 6E	111 6F
112 70	113 71	114 72	115 73	116 74	117 75	118 76	119 77	120 78	121 79
122 7A	123 7B	124 7C	125 7D	126 7E	127 7F	128 80	129 81	130 82	131 83
132 84	133 85	134 86	135 87	136 88	137 89	138 8A	139 8B	140 8C	141 8D
142 8E	143 8F	144 90	145 91	146 92	147 93	148 94	149 95	150 96	151 97
152 98	153 99	154 9A	155 9B	156 9C	157 9D	158 9E	159 9F	160 A0	161 A1
162 A2	163 A3	164 A4	165 A5	166 A6	167 A7	168 A8	169 A9	170 AA	171 AB
172 AC	173 AD	174 AE	175 AF	176 B0	177 B1	178 B2	179 B3	180 B4	181 B5
182 B6	183 B7	184 B8	185 B9	186 BA	187 BB	188 BC	189 BD	190 BE	191 BF

TROY BC128 Barcode

`<Esc>(ØY<Esc>(s1p☐vØsØb247ØØT`   ☐ = desired height

TROY POSTNET

```
<Esc>(15Y<Esc>(s1p□vØsØb2477ØT        □ = desired height
```

32 20	33 21	34 22	35 23	36 24	37 25	38 26	39 27	40 28	41 29
42 2A	43 2B	44 2C	45 2D	46 2E	47 2F	48 30	49 31	50 32	51 33
52 34	53 35	54 36	55 37	56 38	57 39	58 3A	59 3B	60 3C	61 3D
62 3E	63 3F	64 40	65 41	66 42	67 43	68 44	69 45	70 46	71 47
72 48	73 49	74 4A	75 4B	76 4C	77 4D	78 4E	79 4F	80 50	81 51
82 52	83 53	84 54	85 55	86 56	87 57	88 58	89 59	90 5A	91 5B
92 5C	93 5D	94 5E	95 5F	96 60	97 61	98 62	99 63	100 64	101 65
102 66	103 67	104 68	105 69	106 6A	107 6B	108 6C	109 6D	110 6E	111 6F
112 70	113 71	114 72	115 73	116 74	117 75	118 76	119 77	120 78	121 79
122 7A	123 7B	124 7C	125 7D	126 7E	127 7F	128 80	129 81	130 82	131 83
132 84	133 85	134 86	135 87	136 88	137 89	138 8A	139 8B	140 8C	141 8D
142 8E	143 8F	144 90	145 91	146 92	147 93	148 94	149 95	150 96	151 97
152 98	153 99	154 9A	155 9B	156 9C	157 9D	158 9E	159 9F	160 A0	161 A1
162 A2	163 A3	164 A4	165 A5	166 A6	167 A7	168 A8	169 A9	170 AA	171 AB
172 AC	173 AD	174 AE	175 AF	176 B0	177 B1	178 B2	179 B3	180 B4	181 B5
182 B6	183 B7	184 B8	185 B9	186 BA	187 BB	188 BC	189 BD	190 BE	191 BF

TROY POSTNET Reverse (optional)

`<Esc>(15Y<Esc>(s1p☐vØs33b2477ØT`   ☐ = desired height

32 20	33 21	34 22	35 23	36 24	37 25	38 26	39 27	40 28	41 29
42 2A	43 2B	44 2C	45 2D	46 2E	47 2F	48 30	49 31	50 32	51 33
52 34	53 35	54 36	55 37	56 38	57 39	58 3A	59 3B	60 3C	61 3D
62 3E	63 3F	64 40	65 41	66 42	67 43	68 44	69 45	70 46	71 47
72 48	73 49	74 4A	75 4B	76 4C	77 4D	78 4E	79 4F	80 50	81 51
82 52	83 53	84 54	85 55	86 56	87 57	88 58	89 59	90 5A	91 5B
92 5C	93 5D	94 5E	95 5F	96 60	97 61	98 62	99 63	100 64	101 65
102 66	103 67	104 68	105 69	106 6A	107 6B	108 6C	109 6D	110 6E	111 6F
112 70	113 71	114 72	115 73	116 74	117 75	118 76	119 77	120 78	121 79
122 7A	123 7B	124 7C	125 7D	126 7E	127 7F	128 80	129 81	130 82	131 83
132 84	133 85	134 86	135 87	136 88	137 89	138 8A	139 8B	140 8C	141 8D
142 8E	143 8F	144 90	145 91	146 92	147 93	148 94	149 95	150 96	151 97
152 98	153 99	154 9A	155 9B	156 9C	157 9D	158 9E	159 9F	160 A0	161 A1
162 A2	163 A3	164 A4	165 A5	166 A6	167 A7	168 A8	169 A9	170 AA	171 AB
172 AC	173 AD	174 AE	175 AF	176 B0	177 B1	178 B2	179 B3	180 B4	181 B5
182 B6	183 B7	184 B8	185 B9	186 BA	187 BB	188 BC	189 BD	190 BE	191 BF

International Convenience Amount Fonts

In addition to the CMC-7 font used for International MICR applications, TROY provides the following Convenience Amount font sets in a variety of languages (see examples below). These fonts are provided only on the *TROY Security Printing Solutions* CD. These fonts can be easily downloaded into the printer's memory using the TROY Printer Utility.

The following TROY International fonts are non-scalable (fixed in size) and can be used in the *convenience amount* field of the check. The escape sequence used to call each font set in a non-Windows environment is provided directly above each example. The examples below may not be to scale.

British Large Convenience Amount Font (Troy LCF British)

`<Esc>(1Q<Esc>(sØp5.14h16.Ø9vØsØb1T`

French Large Convenience Amount Font (Troy LCF French)

`<Esc>(1Q<Esc>(sØp5.14h16.Ø9vØsØb2T`

Italian Large Convenience Amount Font (Troy LCF Italian)

`<Esc>(1Q<Esc>(sØp5.14h16.Ø9vØsØb3T`

Spanish Large Convenience Amount Font (Troy LCF Spanish)

`<Esc>(1Q<Esc>(sØp5.14h16.Ø9vØsØb4T`

International Convenience Amount Fonts (cont.)

British Small Convenience Amount Font (Troy SCF British)

`<Esc>(2Q<Esc>(s0p6h22.68v0s0b1T`

1 2 3 4 5 6 7 8 9 0 £ € € * , .

ONE TWO THREE FOUR FIVE SIX SEVEN EIGHT NINE ZERO G.B.P EURO   ASK COM PER

French Small Convenience Amount Font (Troy SCF French)

`<Esc>(2Q<Esc>(s0p6h22.68v0s0b2T`

1 2 3 4 5 6 7 8 9 0 FF € € * , .

UN DEUX TROIS QUATRE CINQ SIX SEPT HUIT NEUF ZERO FRANC EURO   AST VIRG POINT

Italian Small Convenience Amount Font (Troy SCF Italian)

`<Esc>(2Q<Esc>(s0p6h22.68v0s0b3T`

1 2 3 4 5 6 7 8 9 0 £ € € * , .

UNO DUE TRE QUATRO CINQUE SEI SETTE OTTO NOVE ZERO LIRA EURO   AST VIRG PUNTO

Spanish Small Convenience Amount Font (Troy SCF Spanish)

`<Esc>(2Q<Esc>(s0p6h22.68v0s0b4T`

1 2 3 4 5 6 7 8 9 0 $ € € * , .

UNO DOS TRES CUATRO CINCO SEIS SIETE OCHO NUEVE CERO DOLAR EURO   AST COMA PUNTO

**Trouble-
shooting by
Symptom**

The following troubleshooting table provides solutions to the most common MICR printing problems. Some of the messages may not apply to your TROY Security Printing Solution. Visually inspect your MICR documents using the ***TROY MICR Document Template*** where appropriate.

<u>NOTE</u>**: This table does not cover all of the ANSI and banking specifications that MICR-encoded documents must meet. Refer to the** *TROY MICR Basics Handbook* **(provided on the** *TROY Security Printing Solutions* **CD) for more information on MICR specifications and check design.**

Condition	Possible Cause	Solution
Incorrect data in MICR line (account #, bank #, etc.).	Error typing in the account #, etc.	Re-enter the correct data.
Incorrect format of fields in MICR line (according to your bank's specifications).	Error typing in the field information.	Re-enter the correct data. Ask your bank for its specification sheet or copy the field format from your old checks, including any spaces.
Vertical streaking or smearing throughout document.	Problem with the Hewlett-Packard printer or TROY MICR toner cartridge.	Refer to the troubleshooting section in the printer user's manual.
Horizontal streaking in MICR clear band during document processing.	Problem with the reader/sorter machine.	The reader/sorter machine must be cleaned and checked or adjusted.

**Trouble-
shooting by
Symptom
(cont.)**

600 dpi MICR font not used in MICR line (an incorrect font such as Courier or Times Roman was used instead).	No MICR font installed.	Install the TROY Font Memory Card and reprint the document.
	MICR mode disabled and an attempt was made to use a TROY MICR font.	Consult your software dealer.
	Software error.	Enable MICR mode by issuing the appropriate escape sequence via your check writing software.
	MICR font requested orientation (portrait or landscape) not installed in the printer.	Install the correct orientation of MICR font via the TROY Memory Card.
	Non-TROY MICR font was used.	Use the TROY MICR font or consult the non-TROY MICR font manufacturer for assistance.
	Font escape sequence coding error.	Verify the escape sequence accuracy.
MICR clear band has magnetically chargeable printing besides the MICR line on front or backside of document.	Border, signature, or other printing extends into MICR clear band on front or back.	Reformat your document design to ensure nothing besides the MICR line appears in the MICR clear band.
	Laser-printed items extend into MICR clear band on backside of the check.	Reformat your document design or other laser-printed items so that there is no MICR information on the check.

Trouble-shooting by Symptom (cont.)

MICR clear band has extra printing (such as toner splatter) besides the MICR line on front or backside of document.	Printer density setting is too dark.	Use TROY MICR defaults.
	Printer fusing unit is contaminated.	Refer to printer user's manual for cleaning instructions.
	Faulty MICR toner cartridge.	Try another TROY MICR toner cartridge. If cartridge is faulty, return to the dealer.
	Use on Non-TROY MICR toner cartridge.	Try another TROY MICR toner cartridge, or consult the non-TROY manufacturer for assistance.
MICR line is skewed on document.	Your MICR paper was cut or perforated inaccurately (lower edge of paper is not perpendicular to the right and left edges of paper).	Measure your MICR paper and/or perforation lines to ensure your MICR-encoded documents fall within ANSI specifications for document size. Ask your paper vendor for correctly sized MICR paper.
	Your MICR paper has changed properties due to environmental conditions in storage or handling.	Measure your MICR paper and/or perforation lines to ensure your MICR-encoded documents fall within ANSI specifications for document size.
	Paper incorrectly loaded.	If using MP tray, paper width guide should lightly touch right side of paper stack.
	Faulty paper transport system in printer.	Try non-MICR paper to verify the problem. Contact TROY Technical Support if problem is verified on non-MICR paper.

**Trouble-
shooting by
Symptom
(cont.)**

MICR line not positioned correctly on the document (vertically and horizontally).	Your MICR paper was cut or perforated inaccurately (paper is too short/long or narrow/wide).	Measure your MICR paper and/or perforation lines to ensure your MICR-encoded documents fall within ANSI specifications for document size. Ask your paper vendor for correctly sized MICR paper.
	Software registration is off (software is positioning data incorrectly on the printed page).	Make adjustments in your software application to adjust the positioning of the MICR line, or consider purchasing the TROY MICR Secure Memory Card, which includes the ExPT feature that allows you to reposition the MICR line via the printer control panel. Use the TROY MICR Document Template to verify all adjustments to the MICR line.
	Printer registration discrepancies (small inconsistencies in positioning of the image on the printed page)	Small errors in the printer's registration can change the position of the MICR line, which is most noticeable on the trailing edge of the printed page. If the MICR line on your checks is positioned on trailing edge of the page (the edge of the page that exits the printer last), try using the TROY printer's Auto-Rotate feature to place the MICR line on the leading edge of the page to avoid any small registration errors that would significantly change the position of the MICR on your printed checks.
	Faulty paper transport system in printer.	Measure your MICR paper. If cut to correct size, consult your software vendor for assistance. Try non-MICR paper to verify the problem. Consult the printer user's manual or TROY Technical support if problem is verified on non-MICR paper.

**Trouble-
shooting by
Symptom
(cont.)**

MICR characters are too thick or too thin.	Printer density setting is too dark or too light.	Use TROY MICR defaults.
	Your MICR toner cartridge is nearly empty.	TROY MICR toner cartridge should not be used if a **LOW TONER** message appears on the printer control panel display. (There should be no visual fading across the document).
	Your MICR paper is out of specification so that toner does not adhere properly to the paper.	Refer to TROY MICR paper specifications elsewhere in this guide and consult your paper vendor to ensure you have the correct paper (including correctly preprinted background areas). Also, check to ensure your paper has not altered due to environmental conditions during storage and handling.
	Faulty MICR toner cartridge.	Try another TROY MICR toner cartridge. If the cartridge is faulty, return to dealer.
	Use of Non-TROY MICR toner or font.	Try TROY MICR toner or font or consult non-TROY manufacturer for assistance.

Trouble-shooting by Symptom (cont.)

MICR characters are broken, there are voids in characters or toner rubs off.	Your MICR paper is out of specification so that toner does not adhere properly to the paper.	Refer to the TROY MICR paper specifications and consult your paper vendor to ensure you have the correct paper (including correctly preprinted background areas). Also, check to ensure your paper has not altered due to environmental conditions during storage and handling.
	Faulty MICR toner cartridge.	Try another TROY MICR toner cartridge. If cartridge is faulty, return to dealer.
	Use of Non-TROY MICR toner cartridge.	Try TROY MICR toner cartridge or consult non-TROY manufacturer for assistance.
	Printer fusing unit is faulty.	Confirm by verifying with a non-MICR application. Contact TROY Technical Support for instructions.
Voids in characters in MICR line or other text.	Transfer roller wear (check for page count of greater than 100,000).	Replace transfer roller.
MICR character spacing and positioning is not correct.	Error in typing MICR line information.	Re-enter correct data. (Do not forget to enter the correct number of spaces where required.) If using TROY MICR fonts in Windows, ensure the point size is set to 12 pt.
	Software placement of characters is incorrect.	Consult your software dealer, or consider purchasing the TROY MICR Secure Memory Card, which includes the ExPT feature that allows you to reposition the MICR line via the printer control panel.

**Trouble-
shooting by
Symptom
(cont.)**

Your bank reports a high reject rate when processing your TROY MICR-printed documents. **NOTE:** This section covers conditions not addressed above. You should also investigate all of the items described above as possible causes of bank rejects as well as the other ANSI MICR specifications not covered in this table.	A Non-TROY MICR toner was used.	Print test documents using TROY MICR toner or consult the non-TROY manufacturer for assistance.
	The bank-of-deposit made a typing or imprinting error when they encoded the check AMOUNT onto the right end of the MICR line.	Ask your bank or one of the document testing facilities in the list following this table to determine if the MICR line error is in the TROY MICR-printed portion of the bank-encoded portion (many errors are bank induced).
	Your MICR paper is out of specification so that your documents tend to jam or tear inside bank processing equipment.	Observe the condition of your processed checks. Refer to this guide for information on TROY and ANSI MICR paper specifications. Your paper vendor or bank may also provide assistance.
	Documents were folded, spindled, or otherwise roughly handled before they reached the bank-of-deposit.	Consider sturdier MICR paper or improved check-handling processes with your regular recipients.
	Your bank's reader/sorter equipment is out of adjustment.	Ask your bank for assistance in determining the cause of your rejects.

**Trouble-
shooting by
Symptom
(cont.)**

MICR characters appear smeared after processing by a bank.	A Non-TROY MICR toner was used.	Print test documents using TROY MICR toner or consult the non-TROY manufacturer for assistance.
	Your MICR paper is out of specification so that toner does not adhere properly to the paper.	Refer to TROY MICR paper specifications and consult your paper vendor to ensure you have the correct paper (including correctly preprinted background areas). Also, check to ensure your paper has not altered due to environmental conditions before printing the checks.
	Your bank's reader/sorter equipment is out of adjustment.	Ask your bank for assistance in determining the cause of your rejects.
NO MICR TONER message displayed in the printer control panel.	No TROY MICR toner cartridge installed.	Install a TROY MICR toner cartridge.
	Detect device on TROY MICR toner cartridge is damaged.	Install a new TROY MICR toner cartridge.
	TROY MICR toner cartridge detect sensor failed.	Call TROY Technical Support.
	TROY Memory Card has failed.	Call TROY Technical Support.

The following table contains the printer control panel display messages generated by TROY Security Printing Solutions. Some of the messages may not apply to your TROY Security Printing Solution. Refer to the Hewlett-Packard Printer User's Manual for other display panel messages.

Message	Description	Action
LOW TONER	The TROY MICR toner cartridge is low on toner.	Replace the TROY MICR toner cartridge with a new TROY MICR toner cartridge. Do not re-install the old cartridge.
TROY INTERNAL RELIANCE MONITOR	The TROY firmware contains advanced internal self-diagnostics checks to ensure constant data integrity. When the firmware detects an exception condition that may result in compromised data integrity, it halts printer operation. This message will be followed automatically with diagnostic information that may assist TROY engineers in evaluating the exception condition.	Contact TROY Technical Support.
49.4C18 SERVICE ERROR	A firmware update has been uploaded to the printer. This error message may appear immediately after the update process has been completed, indicating that the printer has registered the new firmware.	Re-initialize the printer (cycle printer power), or perform a cold reset. Wait for the initialization sequence to finish before continuing to use the printer. The printer must be re-initialized in order for the firmware update to take effect.
53.ØX.1Ø ERROR	Your printer detected the presence of a second system DIMM or memory card.	Remove the DIMMs or memory cards one at a time until the message is cleared, or contact your TROY service representative.
61.X SERVICE **62.X ERROR**	Indicates that the TROY Font Memory Card is improperly installed or has failed.	Re-install the TROY Font Memory Card.
68.1 ERROR	A firmware update has been uploaded to the printer. This error message may appear immediately after the update process has been completed, indicating that the printer has registered the new firmware.	Re-initialize the printer (cycle printer power), or perform a cold reset. Wait for the initialization sequence to finish before continuing to use the printer. The printer must be re-initialized in order for the firmware update to take effect.